

Appl. No. 10/039,838
Amdt. Dated August 17, 2004
Reply to Office Action of March 17, 2004

Attorney Docket No. 82874.0011
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-13 (canceled)

14. (Currently amended) A tap coupler device comprising:
a substrate having one or more waveguides ~~formed~~ therein for carrying optical signals, each waveguide having an output end ~~formed~~ on an output surface of the substrate for emitting the optical signals from the waveguide into free space, wherein the output surface of the substrate including the output ends of the waveguides is inclined with respect to a plane normal to ~~the a~~ direction of the waveguides at the output surface for reflecting a portion of the optical signals from the waveguides toward a top surface of the substrate; and
one or more receiving optical fibers mounted on the top surface of the substrate, each receiving fiber being disposed at an angle with respect to the top surface and having an end disposed near the output end of a waveguide for receiving the portion of the optical signals reflected from the output end of the waveguide, the one or more receiving optical fibers acting as taps for the tap coupler device.

15. (Original) The tap coupler device of claim 14, further comprising a receiving block for mounting the receiving fibers, wherein the receiving fibers are held fixed in the receiving block and the receiving block is attached to the top surface of the substrate.

Appl. No. 10/039,838
Amdt. Dated August 17, 2004
Reply to Office Action of March 17, 2004

Attorney Docket No. 82874.0011
Customer No.: 26021

16. (Original) The tap coupler device of claim 14, wherein the receiving fibers are multimode fibers.

17. (Original) The tap coupler device of claim 14, wherein the output surface of the substrate including the output ends of the waveguides is free from anti-reflection coating.

18. (Original) The tap coupler device of claim 14, wherein the waveguides are single mode waveguides.

19. (Original) The tap coupler device of claim 14, wherein the portion of the optical signal reflected toward the top surface of the substrate is less than about three percent of power in the waveguide.

20. (Original) A tap coupler device of claim 14 further comprising:
an output block which includes a substrate and one or more output optical fibers accommodated in the substrate, each output fiber having an input end disposed on an input surface of the output block, wherein the output block is disposed such that its input surface faces the output surface of the substrate of the tap coupler device to provide registration between the input ends of the output fibers and the output ends of the waveguides for coupling optical signals from the waveguides to the output fibers.

Claims 21-24 (canceled)

25. (Currently amended) A tap coupler device comprising:
an input block ~~which~~ including a substrate holding fixed therein one or more input optical fibers, each input fiber having an output end disposed at an output surface of the input block for emitting optical signals from the input fiber into air, wherein the output surface of the substrate including the output ends of the input fibers is inclined with respect to a plane normal to the direction of the input fibers at the output surface for reflecting a portion of light the optical signals from the input fibers toward a top surface of the substrate; and
one or more receiving optical fibers mounted on the top surface of the substrate, each receiving fiber being disposed at an angle with respect to the top surface and having an end disposed near the output end of an input fiber for receiving the portion of the optical signals reflected from the output end of the input fiber.

26. (Original) The tap coupler device of claim 25, further comprising a receiving block for mounting the receiving fibers, wherein the receiving fibers are held fixed in the receiving block and the receiving block is attached to the top surface of the substrate.

27. (Original) The tap coupler device of claim 25, wherein the receiving fibers are multimode fibers.

28. (Original) The tap coupler device of claim 25, wherein the output surface of the substrate including the output end of the input fibers is free from anti-reflection coating.

Appl. No. 10/039,838
Amdt. Dated August 17, 2004
Reply to Office Action of March 17, 2004

Attorney Docket No. 82874.0011
Customer No.: 26021

29. (Original) The tap coupler device of claim 25, wherein the input fibers are single mode fibers.

30. (Original) The tap coupler device of claim 25, wherein the portion of the optical signal reflected toward the top surface of the substrate is less than about three percent of power in the input fiber.

31. (Currently amended) [[A]] The tap coupler device of claim 25 further comprising:

an output block which includes a substrate and one or more output optical fibers held fixed with respect to the substrate, each output fiber having an input end disposed at an input surface of the output block, wherein the output block is disposed such that its input surface faces the output surface of the substrate of the tap coupler device to provide registration between the input ends of the output fibers and the output ends of the input fibers for coupling optical signals from the input fibers to the output fibers.

32. (New) The tap coupler device of claim 16, wherein cores of the receiving fibers are larger than cross sections of the input waveguides.

33. (New) The tap coupler device of claim 26, wherein cores of the receiving fibers are larger than cores of the input fibers.